

Electrical Equipment Lock-out/Tag-out

Electricity has become one of man's greatest helpers, both in the workplace and home. From the harnessing of electrical power, we have been able to provide the drive for equipment and machinery, lighting, heating and refrigeration, which has made many other modern technologies possible. A powerful friend, electricity can also be a danger if not treated with the respect due this power.

While most employees may not be in a maintenance position requiring them to be aware of the Occupational Safety and Health Administration's (OSHA) Lock-out/Tag-out program requirements, and safe practices (29 Code of Federal Regulations, 1910.147, and 331-339), many facility managers and maintenance personnel must be aware of, and be trained in these requirements, and establish a written program for their location.. While not having been experienced within our program, others have paid for not being aware of these requirements, or ignoring them, with their lives. It is estimated by OSHA that 28,000 workplace accidents are prevented annually, and over 100 lives saved as well, through this program.

The written program for a facility lock-out/tag-out must contain three basic components; training, procedures and inspections. Training is required for two categories of employees; those performing maintenance or providing service to equipment (authorized employees) and employees who may be working near the equipment and affected by the service work (affected employees). Training is worksite specific, and may be equipment specific.

The written procedures are step by step in format for each piece of equipment having two or more power sources (such as supplied power, or stored power such as a capacitor); the sources are identified for location of tag-out locks. These requirements are to be made known to all employees potentially affected by them. Changes to the written policy must also be communicated to all.

An inspection or review of the program must be conducted annually by a qualified inspector. Daily responsibility for ensuring that employees are following the protocols rests with the lead person or supervisor for the employees or equipment area.

BASIC PROCEDURES

1. All effected employees must be notified that the equipment will be secured, and locked out. They must be informed as to why the equipment is being secured as well.
2. Following normal shutdown procedures, the machine/equipment is brought off-line.
3. All switches, valves, or other energy source points of transmission are disconnected or isolated. Stored energy sources (which can include springs, hydraulics, air or steam, as well as capacitors) must be de-energized.

4. Each employee servicing the equipment then secures an individually assigned lock on the control switch or other devices. Signs must be posted to alert passersby that the equipment is secured, and is not to be operated.
5. The equipment is to be tested to ensure that it is de-energized.
6. When the repair/service is complete, each employee then removes his/her individually assigned lock from the energy points. No employee should remove any lock that is not their own. Devices are available for all employees performing service work to secure their lock and tag to that point of transmission, readily identifying a worker who may still be working elsewhere on the equipment or a related system component.
7. When all workers are clear of the operation, the equipment can then be re-energized.

Many locations will establish more detailed procedures, dependent on the operation, type of equipment, employee background and work involved. It is quite frequently encountered that locations will also establish a work permit system on electrical equipment and processes prior to any and all work being performed.